Kimley»Horn

421 Fayetteville St.
Suite 600
Raleigh, North Carolina
27601

January 3, 2018

Memorandum To: Ben Upshaw, PE
Division 5 Project Delivery

From: Tim Padgett, PE
Kimley-Horn and Associates, Inc.

Subject: Traffic Forecast for U-5936 (Wade Avenue Widening) in Raleigh, Wake County

Please find attached the 2017 traffic estimates and 2040 traffic forecasts for U-5936 in Raleigh, Wake County. The project studies the widening of Wade Avenue from I-40 to I-440 as well as an Interchange Modification at I-40 and Wade Avenue The interchange modification mentioned above provides access to SAS Campus Drive for I-40 EB traffic (both ingress and egress traffic) but not I-40 WB traffic. The following scenarios are provided:

- Base Year 2017 No-Build
- Base Year 2017 Build (Widening)
- Future Year 2040 No-Build Region MTP
- Future Year 2040 Build (Widening)
- Future Year 2040 Build 2 (Widening and Interchange Modification)

David Keilson, Scott Walston and Joey Hopkins of NCDOT were contacted during the development of this forecast along with Keith Dixon. In addition, previous forecasts for FS-1205A, U-2719 and I-5506 were reviewed as part of the development of this forecast.

Certain assumptions were made in the development of the forecast:

Fiscal Constraint. Within the Metropolitan Planning Organization (MPO) area, future forecasts are based on projects included in the Financial Plan for the 2040 Capital Area Metropolitan Planning Organization (CAMPO) Metropolitan Transportation Plan (MTP). This information, along with the same for the Durham – Chapel Hill – Carrboro Metropolitan Planning Organization (DCHC MPO) is included in the official version of the Triangle Regional Model (TRM).

Future Conditions and Development Activity. The forecast was developed using output from the Triangle Regional Model (TRMv5). Assumptions about future development activity and changes in the distribution of population and employment in the forecast study area are implicit in the model.

Forecast Methodology. Base year 2017 estimates and Horizon Year 2040 forecasts provided in the attached forecast were developed using a method under which observed traffic data as well as 2015 and 2040 model output were considered.

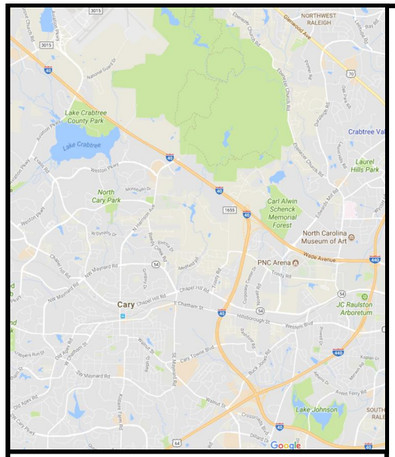
Kimley»Horn

To determine any intermediate years, straight-line interpolation may be used. AADT volumes may be extrapolated for up to two years immediately following 2040. If it is determined that any of these assumptions have become inconsistent with the project and surrounding area activity, please request updated projections at this location.

This forecast was reviewed and approved by the NCDOT Transportation Planning Branch on January 2, 2018.

Cc: Keith Dixon, Transportation Planning Branch
Scott Walston, Transportation Planning Branch
Doumit Ishak, Congestion Management Section
Clark Morrison, PhD, PE, Pavement Management Unit
Brenda Moore, PE, CPM, Roadway Design Unit
David Keilson, PE, Division Planning Engineer
Chris Lukasina, Capital Area MPO
Traffic Forecasting GIS Support

TEL: 919-677-2000
FAX: 919-677-2050



U-5936

2017
No Build

Without Added Lane on Wade Avenue

Vehicles Per Day in 100s

1- Less than 50 VPD

DHV $\xrightarrow{\text{PM}\ (d,t)}$ D

DHV Design Hourly Volume (%) = K30
PM PM Peak Period
D Peak Hour Directional Split (%)
⟶ Indicates Direction of D
(d,t) Dual, TT-STs (%)

Existing Roadway
Road Widening
Proposed Roadway

EXTENTS

Wade Avenue between I-40 and I-440

Wake County **Division 5**

PROJECT

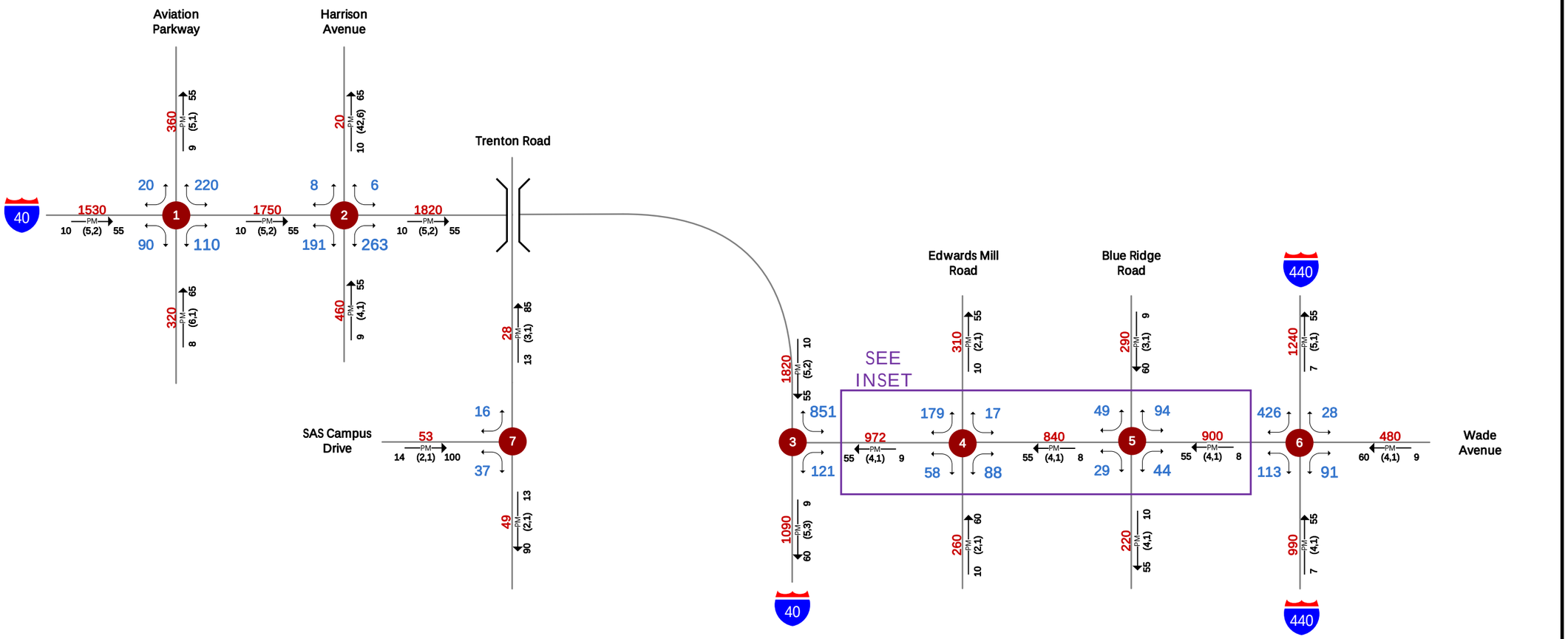
Added lane in each direction on Wade Avenue between I-40 and I-440

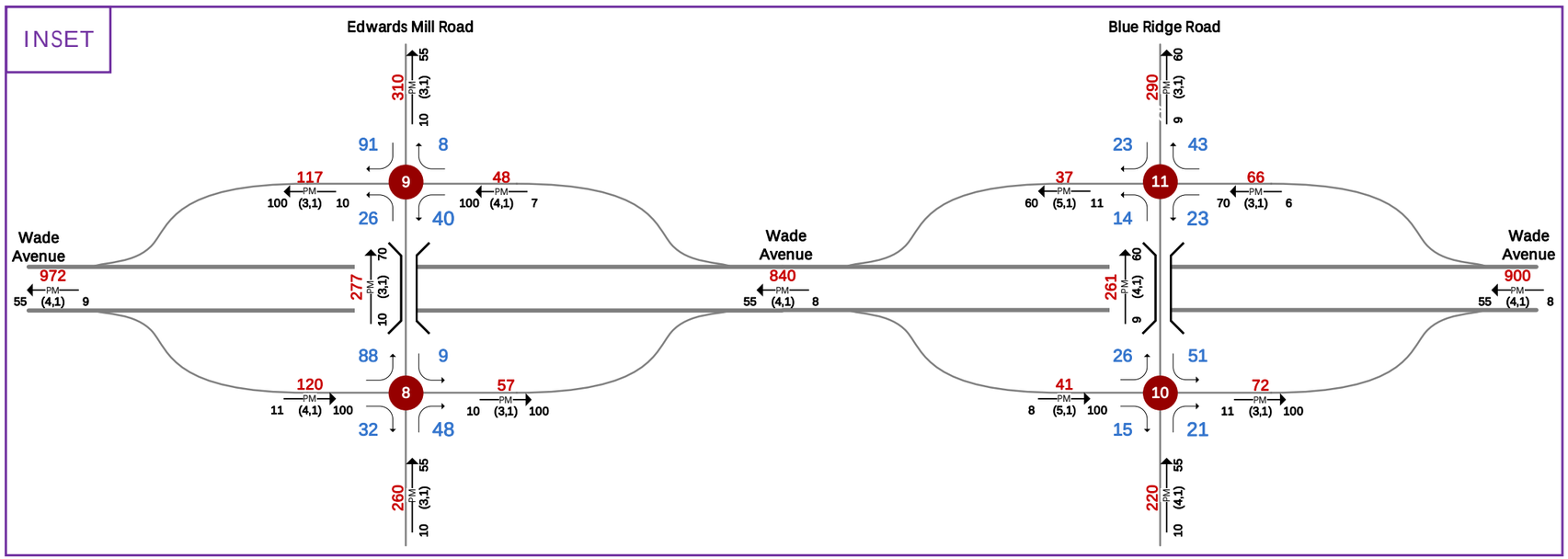
WBS# 45944.1.1

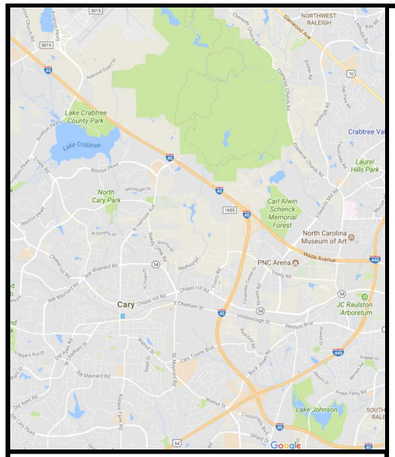
SHEET 1 0F 5

January 2, 2018

Kimley»Horn







U-5936

2040
No Build

Without Added Lane on Wade Avenue

Vehicles Per Day in 100s

1- Less than 50 VPD

DHV $\xrightarrow{\text{PM}\ (d,t)}$ D

DHV Design Hourly Volume (%) = K30
PM PM Peak Period
D Peak Hour Directional Split (%)
⟶ Indicates Direction of D
(d,t) Dual, TT-STs (%)

Existing Roadway
Road Widening
Proposed Roadway

EXTENTS

Wade Avenue between I-40 and I-440

Wake County **Division 5**

PROJECT

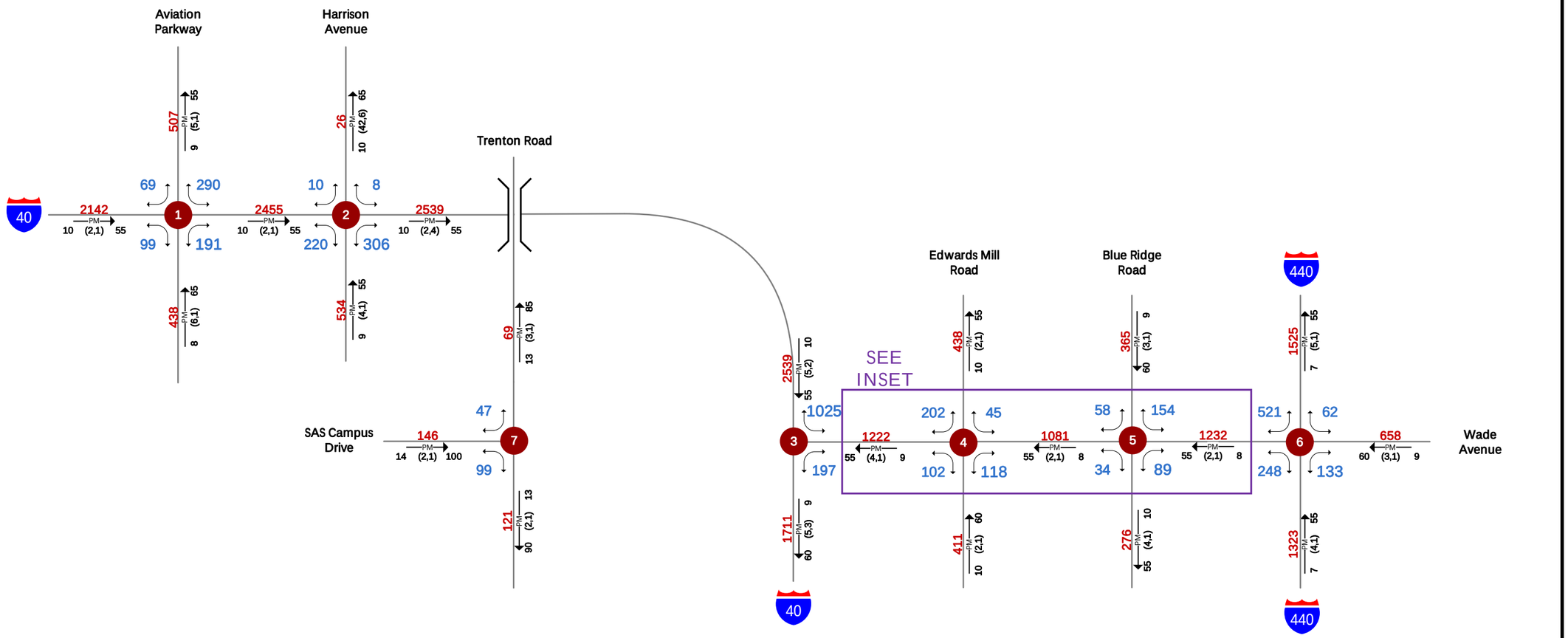
Added lane in each direction on Wade Avenue between I-40 and I-440

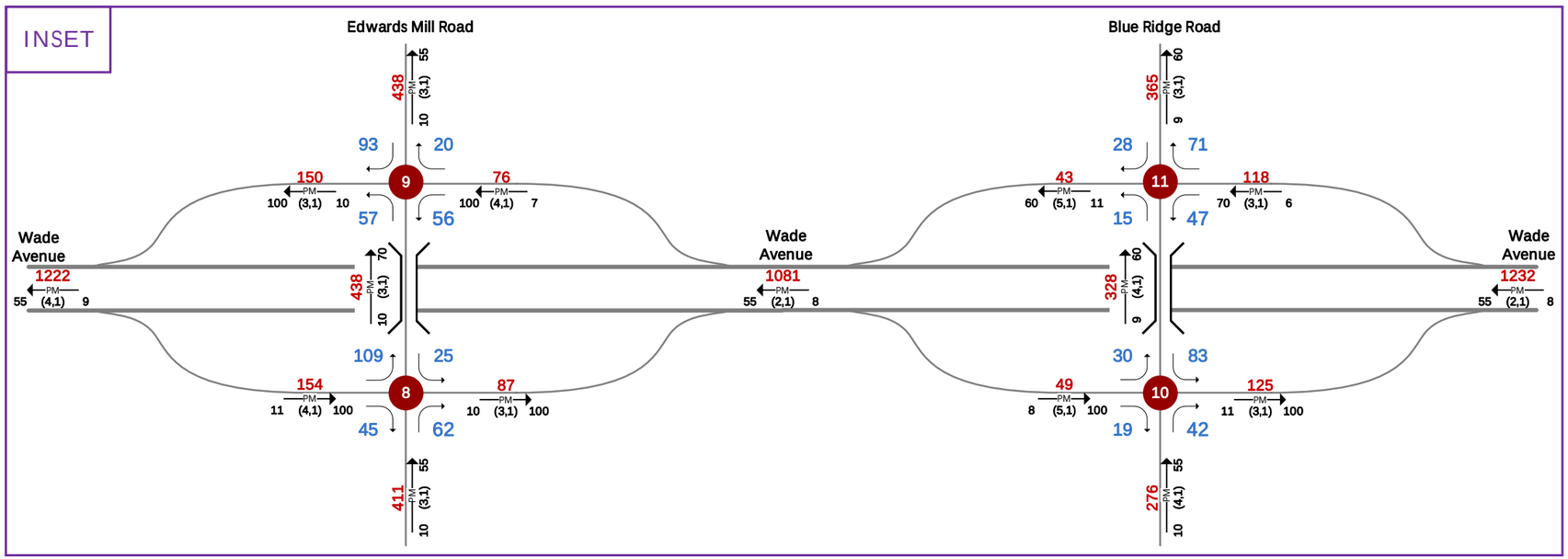
WBS# 45944.1.1

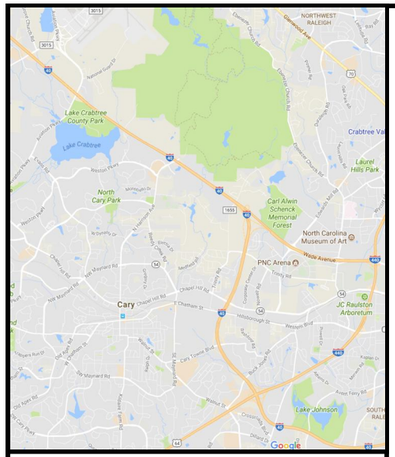
SHEET 2 0F 5

January 2, 2018

Kimley»Horn







U-5936

2017
Build 1

With Added Lane on Wade Avenue

Vehicles Per Day in 100s

1- Less than 50 VPD

DHV $\xrightarrow{\text{PM}\ (d,t)}$ D

DHV Design Hourly Volume (%) = K30
PM PM Peak Period
D Peak Hour Directional Split (%)
⟶ Indicates Direction of D
(d,t) Dual, TT-STs (%)

Existing Roadway
Road Widening
Proposed Roadway

EXTENTS

Wade Avenue between I-40 and I-440

Wake County **Division 5**

PROJECT

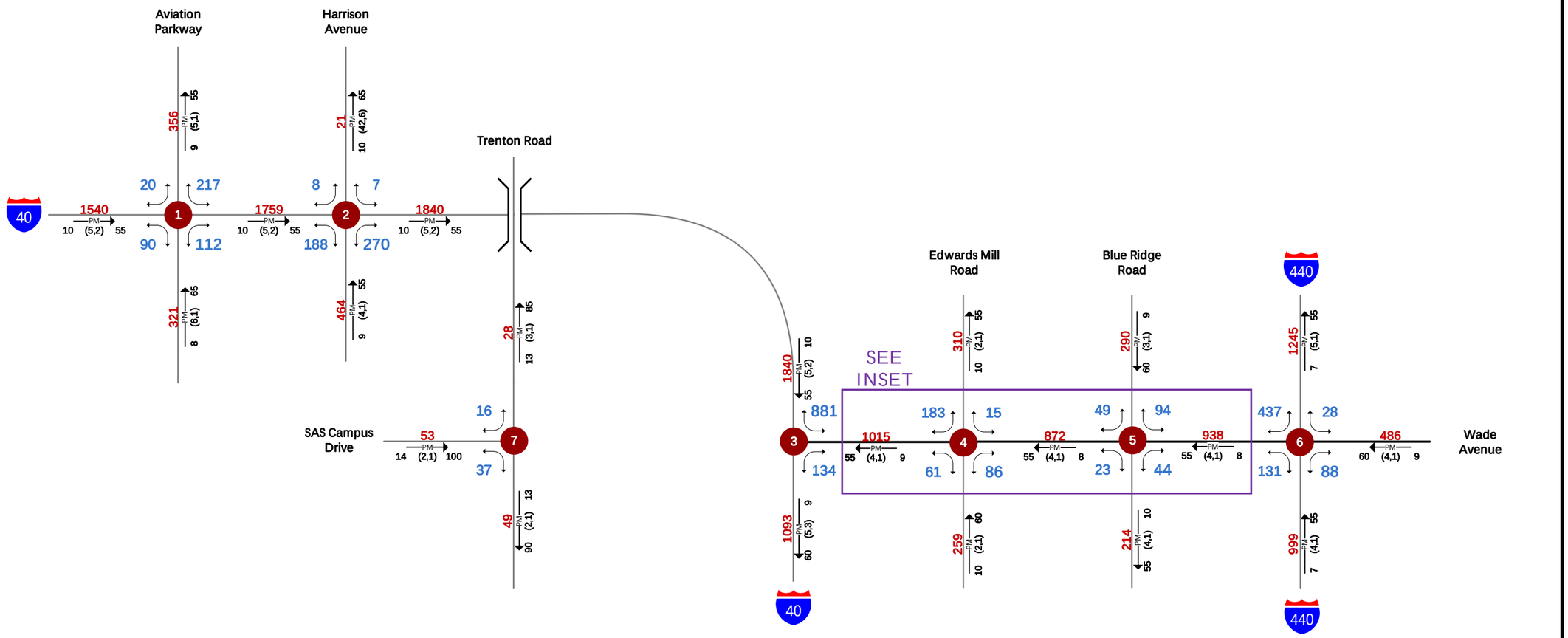
Added lane in each direction on Wade Avenue between I-40 and I-440

WBS# 45944.1.1

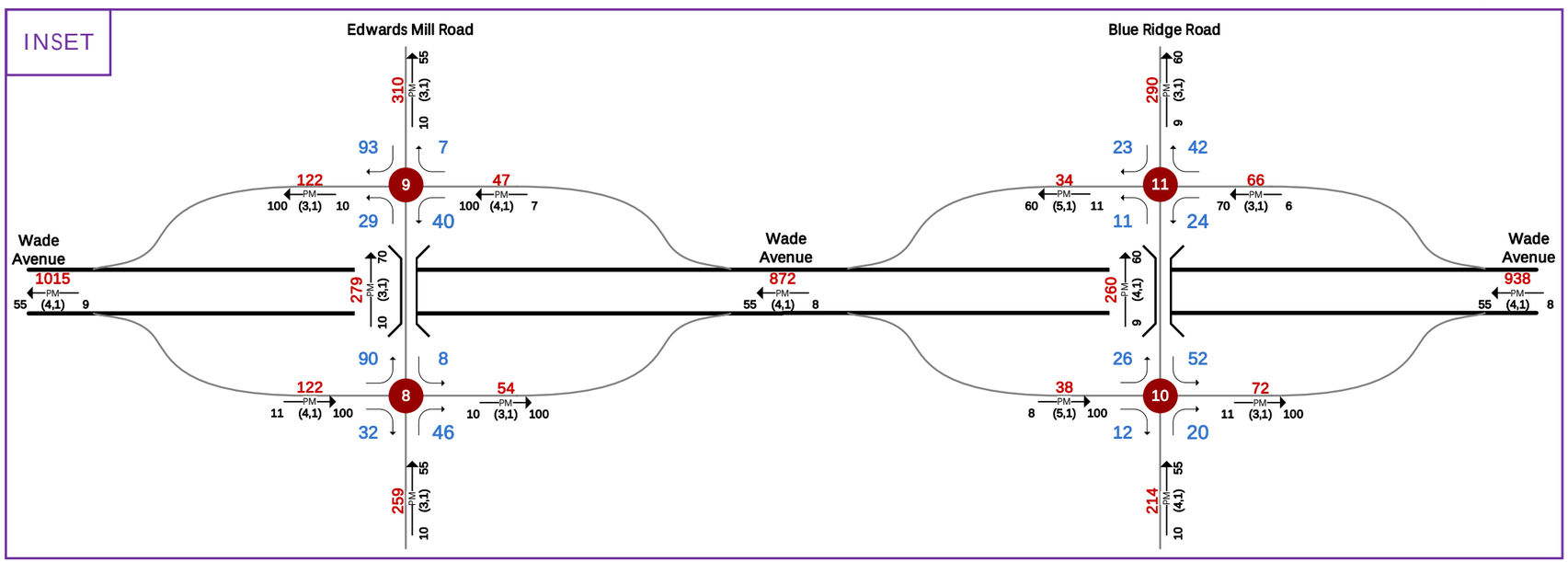
SHEET 3 0F 5

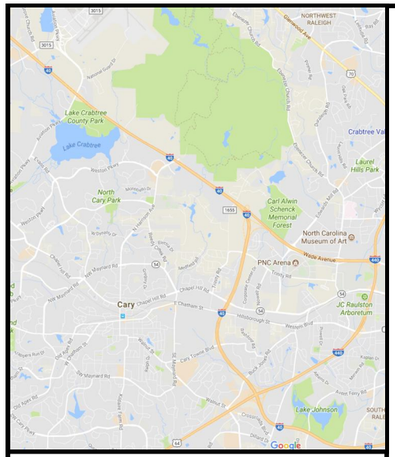
January 2, 2018

Kimley»Horn



INSET





U-5936

2040
Build 1

With Added Lane on Wade Avenue

## Vehicles Per Day in 100s	1- Less than 50 VPD

DHV $\xrightarrow{\text{PM}\ (d,t)}$ D

DHV Design Hourly Volume (%) = K30
PM PM Peak Period
D Peak Hour Directional Split (%)
⟶ Indicates Direction of D
(d,t) Dual, TT-STs (%)

Existing Roadway
Road Widening
Proposed Roadway

EXTENTS

Wade Avenue between I-40 and I-440

Wake County **Division 5**

PROJECT

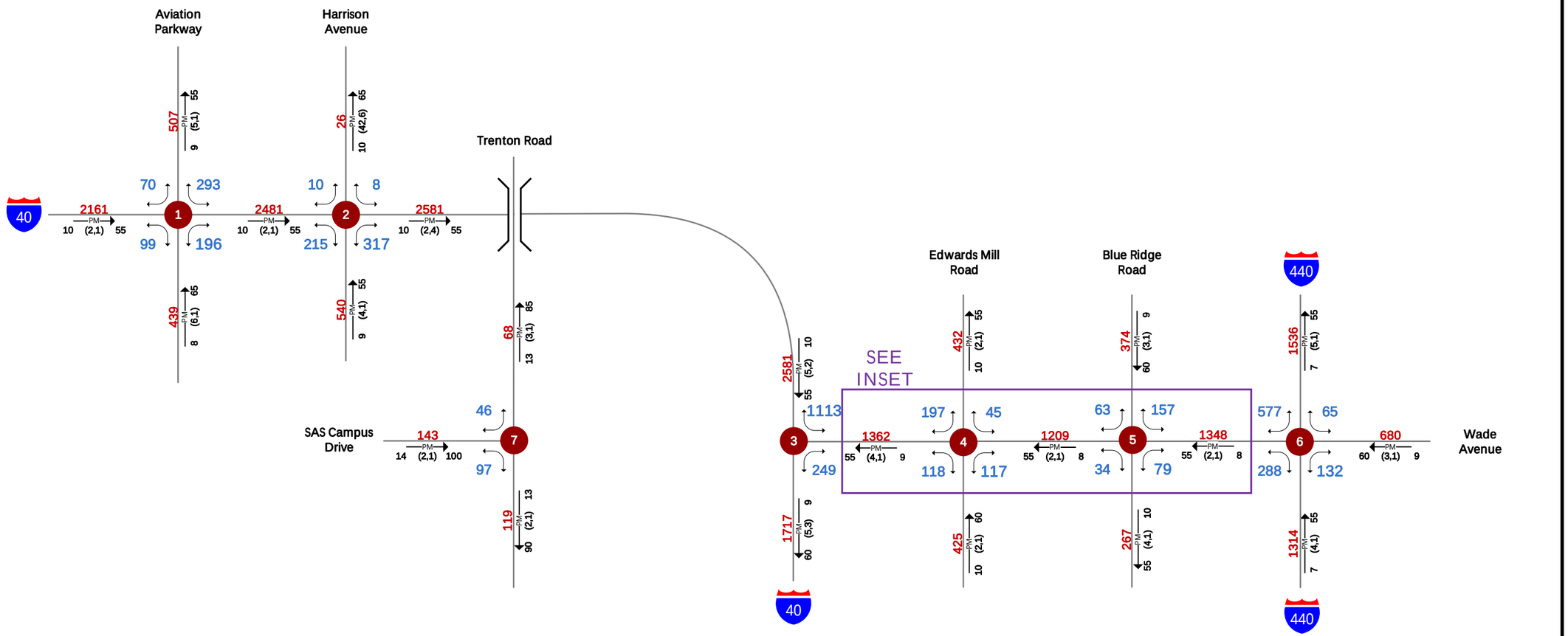
Added lane in each direction on Wade Avenue between I-40 and I-440

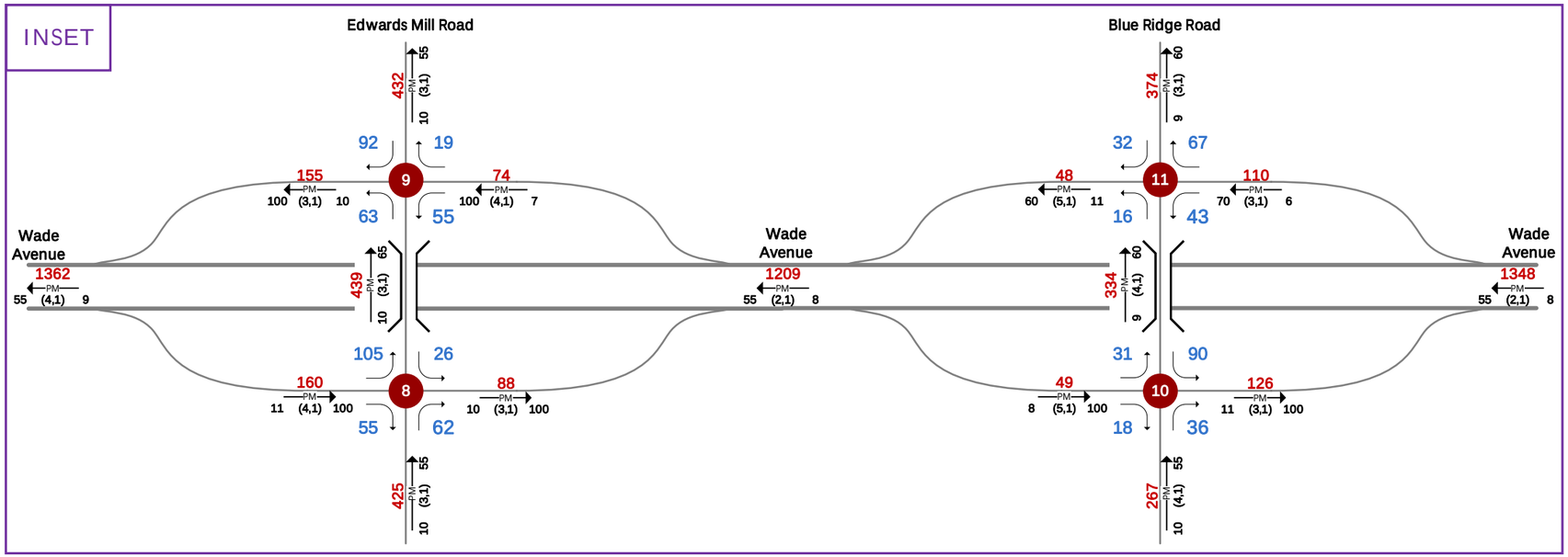
WBS# 45944.1.1

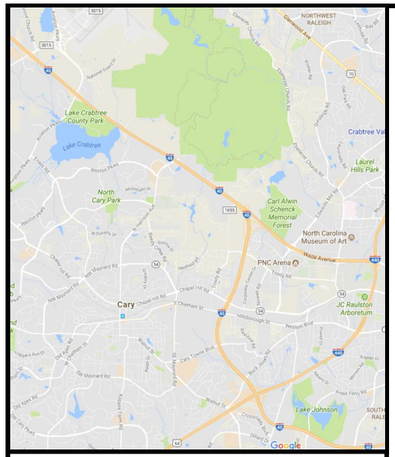
SHEET 4 0F 5

January 2, 2018

Kimley»Horn







U-5936

2040
Build 2

With Added Lane on Wade Avenue and Wade Ave Connection to SAS Driveway

Vehicles Per Day in 100s

1- Less than 50 VPD

DHV $\xrightarrow{\text{PM}}_{(d,t)}$ D

DHV Design Hourly Volume (%) = K30
PM PM Peak Period
D Peak Hour Directional Split (%)
⟶ Indicates Direction of D
(d,t) Dual, TT-STs (%)

Existing Roadway
Road Widening
Proposed Roadway

EXTENTS

Wade Avenue between I-40 and I-440

Wake County **Division 5**

PROJECT

Added lane in each direction on Wade Avenue between I-40 and I-440

WBS# 45944.1.1

SHEET 5 0F 5

Janaury 2, 2018

Kimley»Horn